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 9 min read

79. Why are the Apollo films filmed on the lunar surface unreliable? Short review.

Once upon a time, about 20 years ago, the main claims to the so-called "lunar" photographs and videos boiled down to the fact that:

- a flag flutters on the moon when an astronaut runs past it, but in a vacuum this should not be;
- no stars are visible in the photographs;
- there is the letter "C" on the stone;
- the height of the jumps does not correspond to lunar gravity, etc.

I will not list all of them, but I will note that these were special cases, seen in some photographs and in some videos. There were not so many such "bloopers" and claims to be unreliable. This was partly due to the fact that most of NASA's images were not seen by the public, because the main source of information was articles in newspapers and magazines, footage from documentaries and television reports, and there were not so many of them.

In the early 2000s, on the Internet it was possible to find NASA "lunar" video materials only in very low quality, the resolution was not even 320x240 pixels, but only 240x176. Therefore, it was difficult to judge objectively what was happening in the frame.



Two astronauts on the moon. The size of the video picture is 240x176 pixels

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But as the Internet developed and its capabilities expanded, as NASA opened its archives and posted more and more photos on the Internet, it became obvious that fakes are noticeable not only in a few photographs, but in all lunar images in general. ... The photographs, allegedly taken on the lunar surface, show no sign of reliability. There is no indication that lunar images were taken on the Moon.

1. First of all, the color of the lunar surface is incorrectly conveyed.

NASA rendered its lunar images a neutral gray, similar to volcanic ash. But now, after numerous publications (and especially after the landing of the Chinese lunar rover in 2013), it has become clear to everyone that the Moon looks dark brown up close. In his article, "[What color is the moon?](#)" written in 2013, I showed that NASA made the wrong decision (to make the color of the moon in the pavilion a neutral gray) due to the fact that the triad of filters for Surveyors was chosen incorrectly. Automatic stations Surveyors, which landed on the Moon in 1966-67. filmed the lunar surface with a black-and-white TV camera through 3 color filters. But instead of a red filter (in the blue-green-red triad), a

yellow-orange filter was used. This led to color distortion - a decrease in the red component.

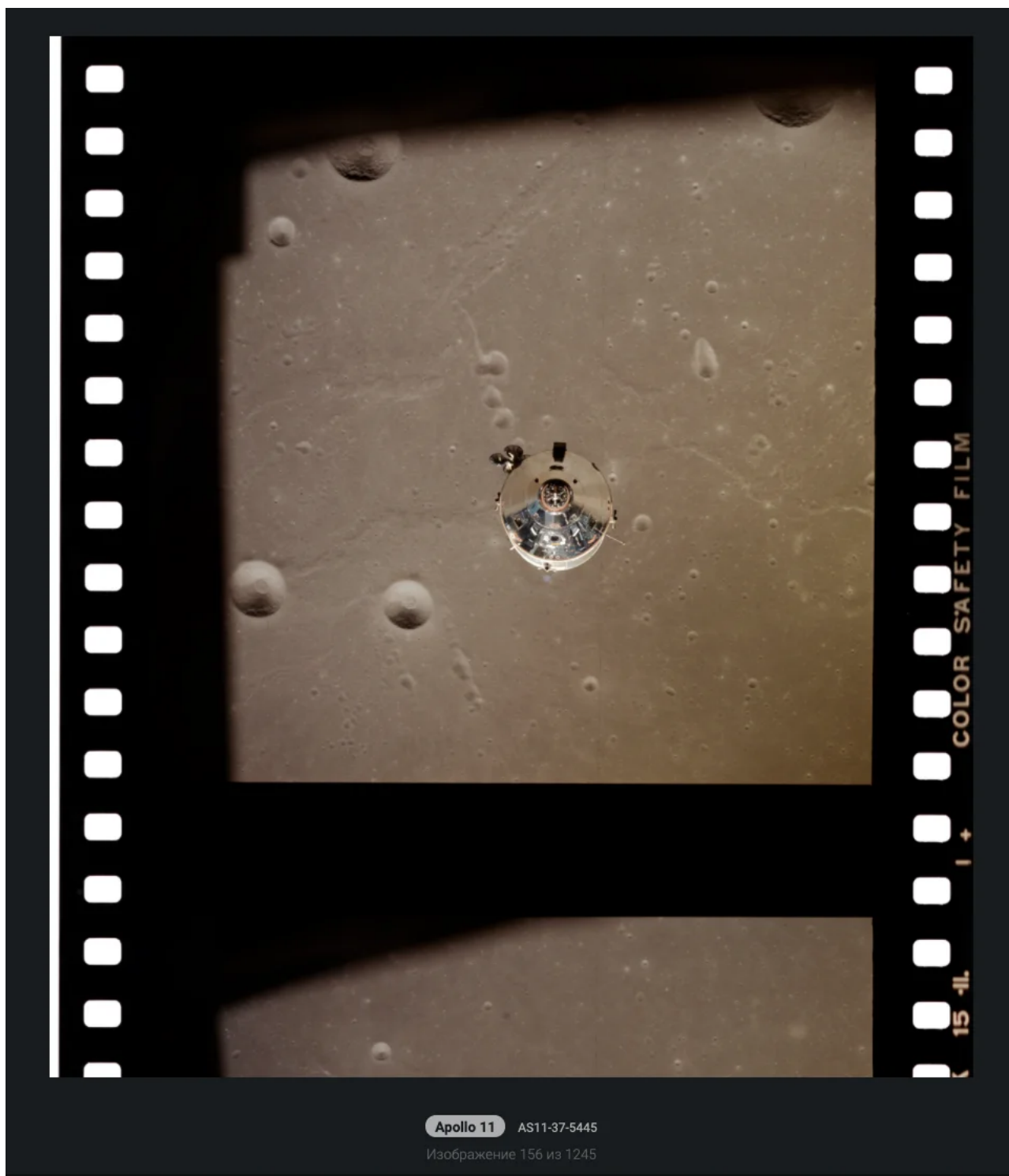
NASA's images are now being actively recolored. If on [the official NASA website](https://www.nasa.gov/) in the image AS11-37-5445 The moon looks still gray (image on the right),



Snapshot from 2019 article on NASA official website (<https://www.nasa.gov/>)

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then on the site "To the Moon" ([tothemoon](https://tothemoon.com/)) the same frame is already richly brown.

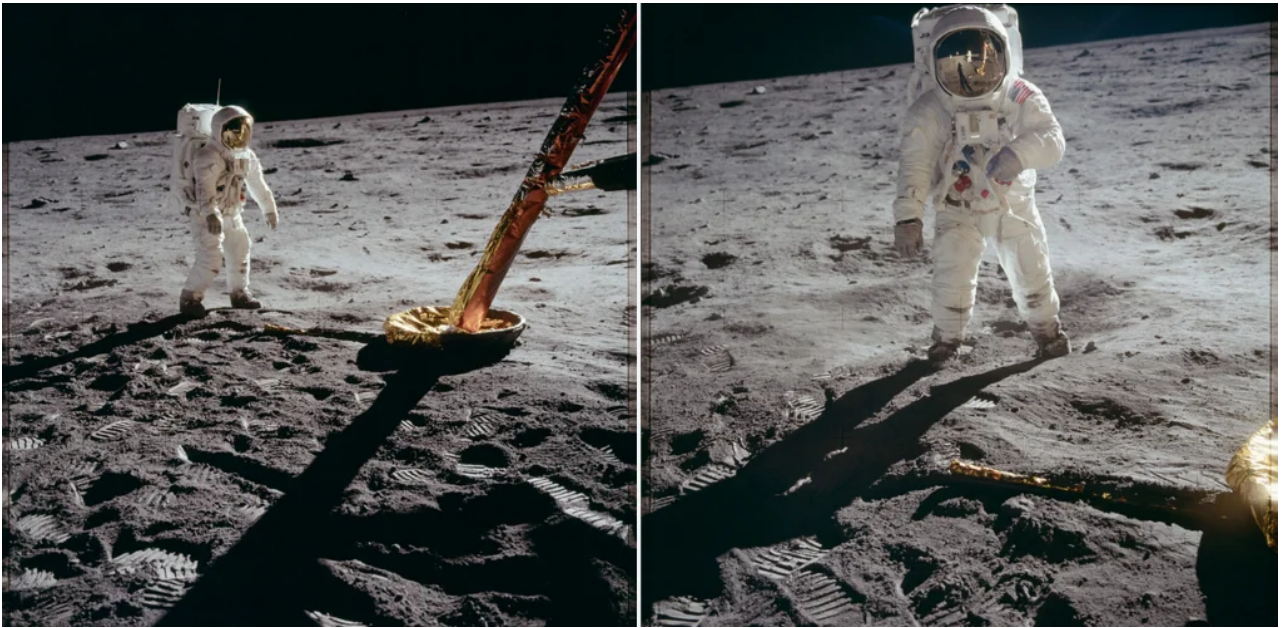


The command module is supposedly against the background of the moon.

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2. Instead of real astronauts in the "lunar" photographs, there are motionless mannequins in fake spacesuits, which, moreover, are about 30-40 cm shorter than the real astronauts.

Mannequins are always supported on two legs. Otherwise they will fall. They stand with their arms and legs spread out.

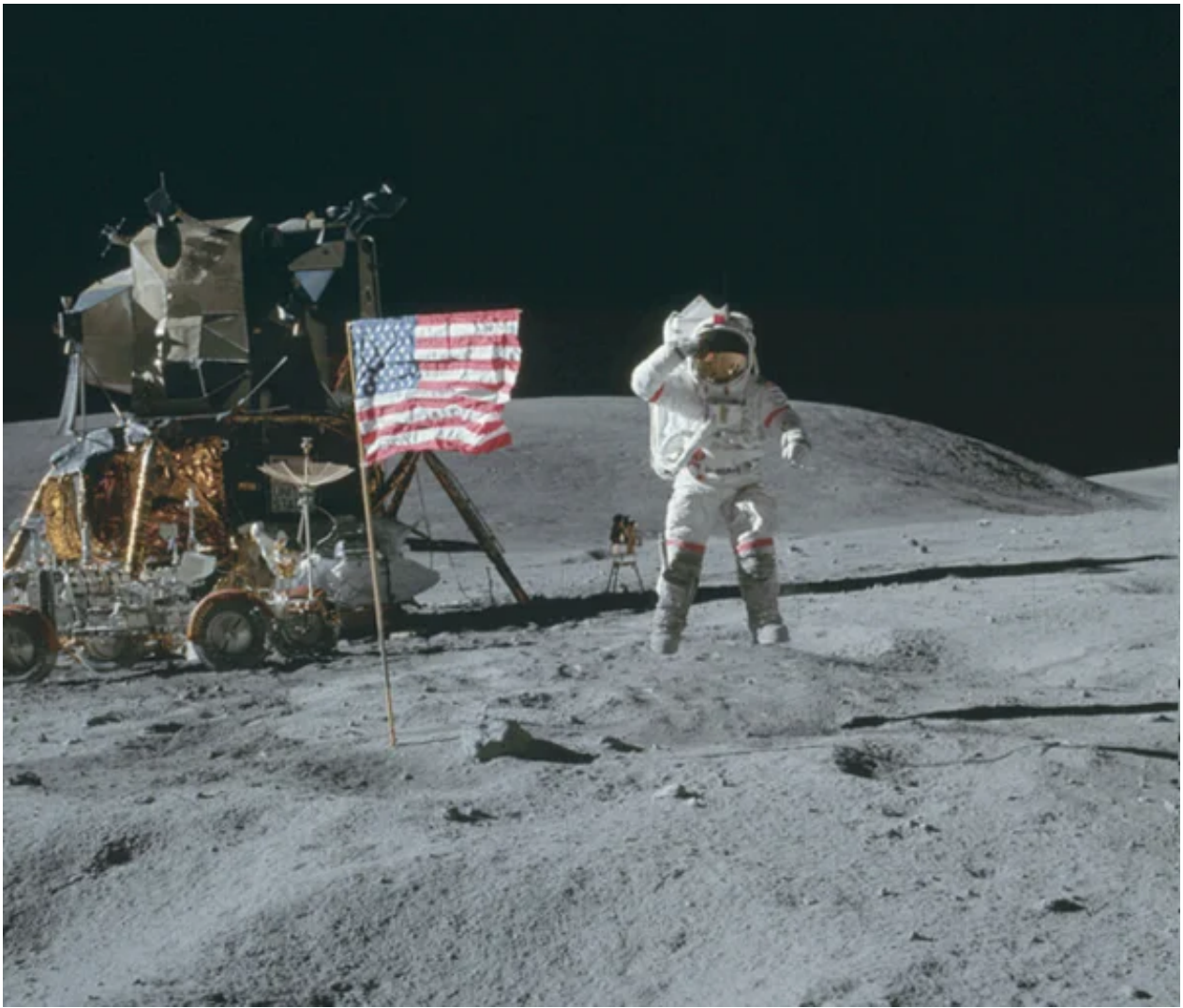


There are pictures of an astronaut leaning on one foot, for example, when descending a ladder in the Apollo 11 collection. But then the mannequin is tied with a belt to the rung of the stairs so that he does not fall.



The dummies are lightweight, weighing approximately 25-28 kg to depict the significant weight loss under lunar gravity. There was an article about this "[How do you depict in a photograph that an astronaut on the moon is light?](#)" ...

There are photographs where the astronaut was shot in a jump. But this is also a mannequin, only it is suspended on thin wires. Here we connected two jumps into one GIF, and it immediately became clear that the dummy was completely motionless.



Two jump frames are combined into one GIF.

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3. In cases where the lunar mountain is visible behind the actor, NASA uses front projection, the technology of which was developed by S. Kubrik.

A slide depicting a mountain is projected onto a screen about 33 meters wide, made of a special reflective material, and a lunar module and a mannequin are displayed in front of the screen. The distance to the screen is about 27 meters. In this case, the border is clearly visible - the horizontal line separating the vertical plane of the screen from the horizontal plane of the filled soil.



Photo frame from the Apollo 15 mission

Photo frame from the Apollo 15 mission

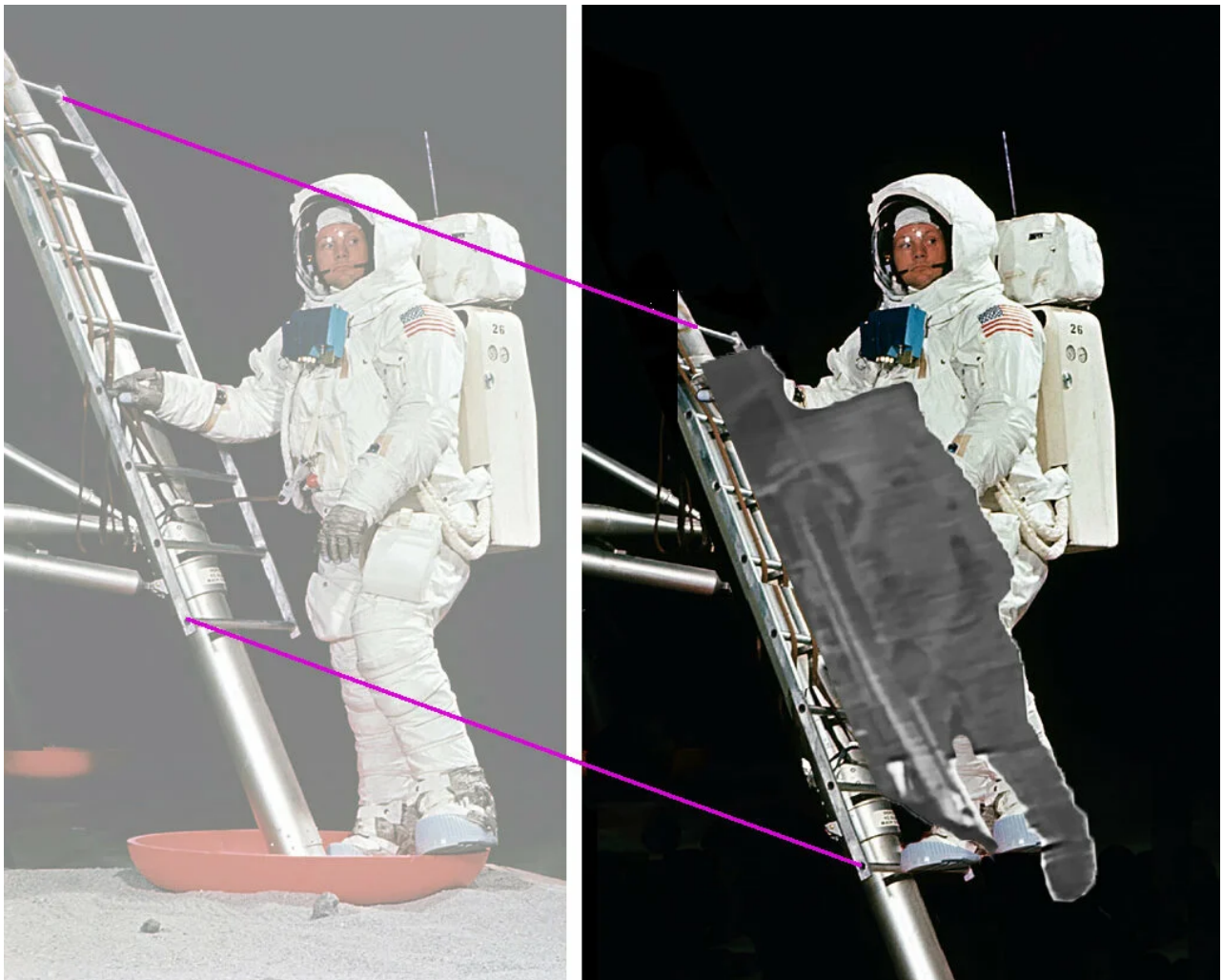
To prevent the light from hitting the movie screen, the actors are illuminated with a back-side light. The location of the camera, slide projector and movie screen is rigidly defined and does not change so as not to change the scale of the mountain. In order to get at least some variety of frames from the same shooting point, the camera is turned slightly to the left and slightly to the right or the platform with the filled soil is moved relative to the cinema screen.

There was an article about these features of the front projection "The Americans filmed different landings on the moon in the same pavilion." Examples of frames of the same

type from the Apollo 15, Apollo 16, and Apollo 17 missions are given.

Where there is no mountain in the background and no movie screen (for example, in the Apollo 11 mission), there, the actors representing the astronauts can be illuminated from any direction.

4. In videos, astronauts are replaced by undersized actors.



Comparison of the height of the real Armstrong (color image) and the "lunar astronaut" (black and white image). Both astronauts are on the bottom step with their right feet. In the two pictures, at least 5 clearly distinguishable steps of the staircase are aligned.

Comparison of the height of the real Armstrong (color image) and the "lunar astronaut" (black and white image). Both astronauts are on the bottom step with their right feet. In the two pictures, at least 5 clearly distinguishable steps of the staircase are aligned.

This is described in detail in the article. ["Who instead of Armstrong went down the stairs?"](#)

The use of short actors can be seen not only in the Apollo 11 mission, but in all Apollo expeditions. For example, here is a freeze frame from the Apollo 17 collection.



5. If we accelerate the lunar video by 2.5 times, it becomes obvious that all runs on the Moon were filmed under gravity.

Since the attraction on the Moon is 6 times less than that of the Earth, objects in free fall move to the square root of 6, 2.5 times slower. Therefore, to simulate a stay on the moon, NASA simply slowed down the display of runs filmed in the pavilion by 2.5 times. And he asked the actors to scatter the sand with their feet more often so that it was clear that it was slowly crumbling down. You can see that the jumps do not exceed 10-15 cm, and the astronauts hold fake foam cameras to simulate their lightness. Here, look, for example, [video from the Apollo 17 collection](#).

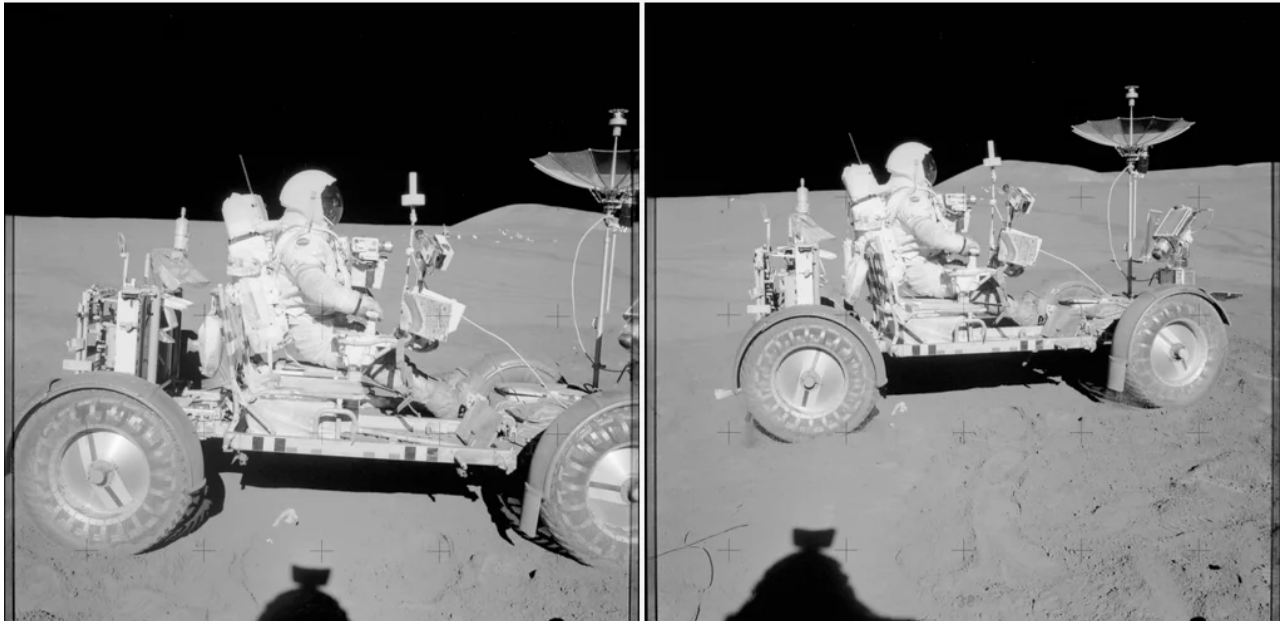
Or a whole 8 minutes from the Apollo 16 collection. There, the actors deliberately shuffle their feet in the sand and scatter all kinds of scientific instruments to demonstrate that they are slowly falling.

Apollo 16 - такие движения €



6. In the background, the actors are replaced with dolls 25-30 cm high.

Due to the impossibility of building a giant pavilion and illuminating it with one powerful light source that mimics the sun, NASA used technology proven in Hollywood. Instead of real objects, miniatures are used - layouts in a ratio of 1: 6-1: 8. At the same time, the shooting area in the pavilion is about half the size of a football field.



Dolls can be stationary, as, for example, in the most famous electric rover ride on the "Moon", when a doll about 25 cm high sits on a radio-controlled model of a rover with a hand hanging in the air. This is a detailed article. ["The most famous" lunar "shots were shot using puppets."](#)

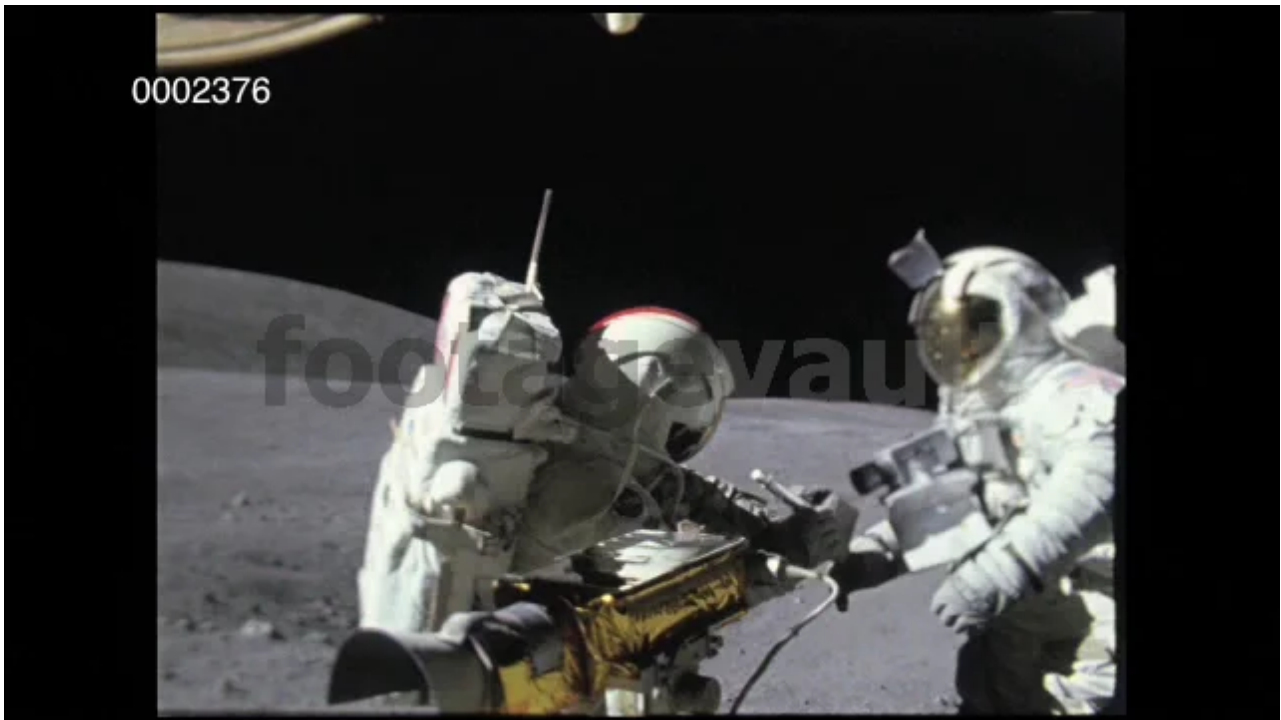
The fact that astronauts are being replaced with dolls has been expressed for a long time, but such messages were often treated with skepticism, until the operator of combined filming Vsevolod Yakubovich spoke on this topic in 2012, who made combined shots at Mosfilm for more than 80 films.

Lunar rover on the moon. Was



To give the dolls movement, they can be shot by animation, frame by frame. But in such a puppet cartoon it is impossible to show jumping and sand scattering underfoot, so the

puppet astronauts do not appear below the knee. Here are some examples of puppet cartoons in the Apollo missions:



Freeze frame from puppet cartoon

Freeze frame from puppet cartoon

For what puppet cartoons were filmed, you can find out from the article ["NASA has provided puppet cartoons as evidence of human presence on the Moon."](#)



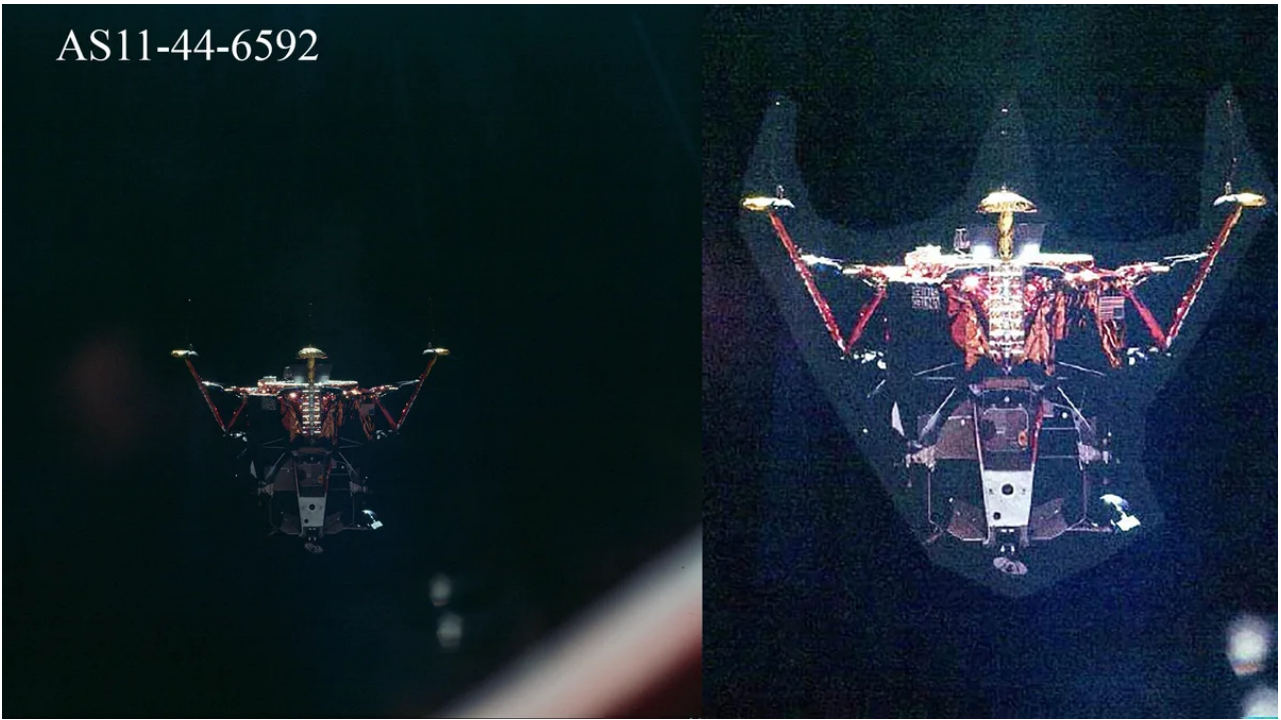
A doll tries to dust off a fake camera

A doll tries to dust off a fake camera

7. Miniatures were used in scenes of undocking the lunar module from the command compartment.

Instead of a bulky 15-ton lunar module, a small model was used on the filming, which could easily be rotated in front of the camera in different planes. Then, with the help of masks, the lunar module was imprinted into the window frame. Editing traces (mask boundaries) become noticeable when the image is brightened.

AS11-44-6592



Undocking frame in the Apollo 11 mission

Undocking frame in the Apollo 11 mission

In the Apollo 11 collection, we counted 18 such combined frames. There was an article about this: [Apollo 11 There are 18 fake shots in just one cassette. How will NASA's defenders squirm?](#)

The same masks were used in the undocking footage of the Apollo 16 mission. Masks of combined frames were also noticed in the Apollo 17 mission. This is described in the article: [Analyzing the Apollo images using a forensic program.](#)

And of course, miniatures were used not only for photographs, but also for undocking and docking videos shot on film.

These are, in my opinion, the main ways to falsify "lunar" photographs and videos. They are nothing new. All these methods were initially worked out at film studios, tested many times, and then transferred to the creation of "lunar content". Everything that NASA claims to be images on the lunar surface is nothing more than ordinary Hollywood film production, sometimes of not very high quality. Now, when the TV was replaced in the 60-70s. XX century technologies of the XXI century came with a resolution of 4K and 8K, dolls in the frame and mock-ups on wires in NASA's stories look just primitive.

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Cameraman L. Konovalov was with you. Until next time!

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